

WM. F. NORRIS,
No. 1530 LOCUST STREET,
PHILADELPHIA.

THE AMERICAN JOURNAL OF
OPHTHALMOLOGY.

VOL. X.

MARCH, 1893.

No. 3.

ORIGINAL ARTICLES.

A CASE OF SYMMETRICAL INVASION OF BOTH
ORBITS BY A PROBABLY INTRACRAN-
IAL SARCOMA.

BY ADOLF ALT, M. D.

In the November number 1886, of this Journal I reported conjointly with Dr. D. M. Wick, of New Hartford, La., a case of rapidly growing sarcoma of the anterior portions of the brain, which, in its course, invaded both orbits, pressing the eyeballs out of them and leading to rupture of the left cornea with expulsion of the lens, and to ulceration of the right cornea, before death occurred.

The following unfortunate case is very similar to the one reported, although no autopsy was made and consequently no microscopical examination could be obtained.

On February 2, 1892, F. H., twelve and a half years old, was brought to my office for consultation by his family physician Dr. Guelich, of Alton, Ill. He stated that four months previous to this visit the boy, while playing, fell from the roof of a small shed. By this fall the temporal bone over the right

orbit was fractured, and a depressed scar marked the place of fracture when I saw him. After the fracture was healed the boy seemed as well as before the accident and went to school cheerfully. Four weeks previous to this consultation he was attacked by symptoms which were, on account of the prevalence of the epidemic, considered to be due to influenza. Headache and vomiting were frequent and the general condition of the boy became very low. During the weeks between this attack and the visit to me, diplopia and strabismus, as it was thought, had gradually developed, and it was mainly on that account that I was consulted.

I found a slight but undoubted exophthalmus in a down and outward direction. Vision at that time was $\frac{20}{xxx}$ in either eye and could not be improved by means of glasses. The ophthalmoscope showed tortuous veins in both retinae, but particularly in the right eye. The optic papillae were somewhat pale. There was, however, no oedema or exudation in the papilla. On exploring the orbit by palpation, a round, hard tumor could be felt behind the trochlea. It seemed smooth and was immovable.

My diagnosis was sarcoma of the right orbit, with a bare possibility that a periosteal abscess might be found instead. Yet, the absence of all inflammatory symptoms did not make the presence of an abscess very probable.

The physician could not believe in the existence of a malignant growth, but he promised, if the boy was in condition to stand an exploration, or if necessary, a radical operation, to bring him to a hospital within a few days.

I neither heard nor saw anything further of the case until March 12th, 1892, when the boy's father came to me to ask me to come in consultation to Alton, as the boy was not in a condition to be brought to me. He stated that the boy could not see with the right eye at all, and had intense headache all the time. He further said that the tissues around the right eye protruded through the palpebral fissure, and that it was thought if I could let out the pus from behind the eye, the boy would get relief.

When I saw the boy the change in his appearance, which had occurred within five weeks, was enormous. He was perfectly emaciated, lay in bed and could not move himself. Vision was totally abolished in the right eye, while the left eye still had bare perception of light. The right eyeball protruded to such an extent that the cornea and a considerable ring of excoriated, engorged and easily bleeding conjunctiva lay bare around it. The cornea was dry and an ophthalmoscopic examination was impossible. When I placed the finger upon the upper lid, it turned up and revealed a solid vascular tumor which crept forward under the conjunctiva and could be seen also in the lower cul-de-sac. I made these examinations while the boy was put under the influence of chloroform. Although I was, of course, convinced of the correctness of my diagnosis of sarcoma of the orbit, the physician, as well as the family of the unfortunate boy, insisted upon my making a trial-incision. I consequently made an incision into the tumor above the eye, which showed it to be a solid but vascular growth. While the child was under the influence of the chloroform I explored the left orbit and found the same conditions. This eyeball, too, was surrounded and pressed forward by the growth, and there was between the two eyes only a difference in degree.

From what I have heard afterwards, the boy lingered about six weeks longer, and the tumors grew way out of the orbits and palpebral fissures before death ensued.

CONSERVATIVE TREATMENT OF STRABISMUS CONVERGENS.¹

BY DR. S. C. AYRES, CINCINNATI.

The treatment of strabismus convergens has passed through many interesting phases since the first operation for its relief was done by Dieffenbach, in 1839. Walton says that the operation was done a hundred years earlier by an Englishman named Taylor, who was a traveling charlatan. His visit to Paris is mentioned in the "Mercury of France," for June, 1837. In a dissertation written by Verkeyden, in 1767, he states that the English treat strabismus by surgical means. I have an old book on Diseases of the Eye, written by Sir William Read, oculist to her Majesty, Queen Anne. It was published in London in 1706. He does not mention any surgical treatment, but says that "if the disease proceeds from repletion, softness and palsy in some muscles, it will be necessary to purge the brain wherein the precedent cause of this disease was contained: to which purpose to let him chew things in his mouth, and put sternutories into his nose. But if it is engendered by too much want and emptiness of the blood and spirits the sick party must be nourished very well and take to the use of asses' milk. The particular remedies must be fomentations of a moist nature, and the blood of a turtle or pigeon dropped into the eye is very good. He says that some red thing must be fastened on the temples or on the contrary ear to the turning awry of the eye, that the child may turn the eye that way and so amend the deformed sight."

It seems strange now, when it is known for so long a period

¹Read before the Academy of Medicine, January 30, 1893.

that there were four recti muscles to the eye, that surgeons had not ventured earlier to operate for a deformity which was so striking and so well known. It remained for Stromeyer, in 1838, to propose the tenotomy of the internal muscle, and for Dieffenbach, in 1839, to first successfully execute it. The literature on this subject is interesting, and shows a gradual development from the crude ideas of Sir William Read up to the time of Dieffenbach, Donders, von Graefe and the writers of the present day. In fact the question to-day is by no means finally settled, but is in a state of evolution. Great advances have been made in the past few years from the rational study of its true pathology, and the final results have been greatly improved. The operation by Dieffenbach was crude indeed, looking at it from the light of the present day. The muscle was severed so far from its insertion into the sclera, that divergence frequently resulted. He had many followers in Germany and France and England, but the operation fell into disrepute on account of the numerous failures. The original deformity, so far from being corrected, was actually increased, and a diverging, prominent and staring eye was the result.

In the first edition of Lawrence on the eye in 1833, no mention of any surgical treatment for strabismus is made. In the third edition of 1840 he says in the introduction "that the subject of squinting and the new operation for its removal have been fully considered." As to the causes he mentions preternatural contraction of one of the recti muscles, convulsions, mental emotions, teething, disorders of the stomach and bowels, irritation of worms, opacities of the cornea, habit of imitation and other reasons. The operation as described is to incise the conjunctiva over the belly of the muscle, pass a grooved director underneath it, and then, by a single cut, the entire muscle is severed. Before the operation was many months old, the *Medical Gazette* and *Lancet* contained an article inquiring into the causes of the failure of the new operation for the cure of squinting. But the operation had a great popularity for a while, and it was probably performed by many

very incompetent persons, for there were traveling charlatans in those days. When the operations performed by the most skillful were so defective, what could we expect from the others? Haynes Walton, in the first edition of his work, on *Operative Ophthalmic Surgery*, in 1852, says of the causes of strabismus: "It may be that the balance of antagonistic muscular power in the orbital muscles is, from their mechanical disposition, nicer in them than in other muscles; and that they are peculiarly susceptible of disturbance in their harmony, from causes within and without, or more influenced by nervous agency, a cause commonly assigned for the deformity, but one of which we know nothing."

This is an interesting statement as it contains a grain of truth which has developed into a tree of considerable size and strength. He does not mention errors of refraction as a possible or probable cause of the deformity, as he knew nothing about them. But he speaks of a nervous agency of which he, at that time, knew nothing. The clouds which surrounded this subject were cleared away by the genius of a worker in Utrecht, who studied the question at issue from a new and scientific standpoint. To Donders belongs the credit of studying and classifying the errors of refraction and demonstrating their influence on the ocular muscles. In 1864 the New Sydenham Society published his work on the *Anomalies of Accommodation and Refraction of the Eye*. It is a work which will stand as an enduring monument to his name, and will mark an epoch in the phenomenal development of ophthalmology.

In it he states that strabismus convergens almost always depends upon hypermetropia, and in discussing the origin of strabismus says that it is promoted by circumstances which render convergence easier, and mentions a peculiar structure or innervation of the muscle. The former cause was better known to him than the latter, and it is possible that he attributed too much to it, as the latest investigations tend to show that the innervation of the muscles is a very important factor.

Noyes, in his work on *Diseases of the Eye*, published in 1881, refers to Donders as regarding "converging squint and

hypermetropia as standing almost universally for cause and effect." He remarks, "large observation has modified these views, and while we find that hypermetropia acts the most important part in the production of converging squint, we have many statistics to show that essential muscular defects are also operative." In his larger work (1890) he says the occurrence of strabismus is evidently determined by a variety of factors, and amongst the most potent is the actual power of the muscles of adduction and abduction.

Stellwag, in the first edition of his work in 1868, says anomalies of refraction together with occupations which require excessive tension and relaxation of the muscle of accommodation for the purpose of distinct vision, are, in the greater number of cases the cause of squint. Less frequently, the cause lies in a preponderance or weakness of a certain ocular muscle.

Hansen Grut, in "Transactions of Ophthalmological Society," 1888-9, says "that convergent strabismus is the result of an innervation which produces a greater shortening of the recti than is desirable. If this abnormal innervation ceases either permanently or temporarily the strabismus disappears."²

Valude, in *Archiv. d' Opht.* vol. X, after reporting the clinical history of thirty cases of strabismus comes to the conclusion "that ordinary concomitant strabismus does not depend on ametropia alone, and that the explanation of Donders probably does not even fit the majority of cases, but that a neuropathic disposition is an important, sometimes the principal, factor in the development of strabismus. There are cases in which ametropia alone, in others the nervous affection and in still others both combined are the cause."³

Very much more might be added showing the views of men eminent in the profession who have studied these points in the most careful and exact manner. We may then sum up the question briefly: We have convergent strabismus beginning

²Review, *Archiv. Oph.*

³Review, *Archiv. Oph.*

in early life, generally from the second to the fifth year, but occasionally in the first year. It is intermittent at first, but finally becomes constant. It may affect one eye or it may be alternating. It is a defect which parents want removed if possible. How can it be done most safely and satisfactorily for the patient? There are a *few* cases where the degree of convergence is so high that surgical measures have to be resorted to. In these there is a marked shortening of the internal rectus and a very weak condition of the external. But these, in my judgment, constitute the minority. The prognosis will depend something on the length of time the squint has existed. In all cases the refraction should be tested and the anomaly recorded. A large proportion will be found to have hyperopia. In children who cannot read, the degree of the error will have to be estimated by the ophthalmoscope. The degree of hyperopia will vary very much in these cases. It will be surprisingly low in some, some will have compound hyperopic astigmatism and some myopia. In cases of hyperopia the manifest hyperopia should be fully corrected. The child should be given as strong glasses as he will tolerate and be compelled to wear them constantly. The influence of these glasses on the squint will not always be seen at once. It may be a few months before it can be detected. Their influence on the accommodation, however, can be noticed immediately. The comfort with which children wear glasses is surprising to those who do not understand the scientific explanation of their use.

When the eyes are directed to a near object two things take place in the visual act. We converge and we accommodate. The convergence is brought about by the internal muscles, and if they are not strong enough to maintain this position for a prolonged time they become unsteady and painful and demand rest. The accommodation is brought about by the action of the ciliary muscle on the crystalline lens. In hyperopes the strain upon the accommodation is very great and an effort to converge and accommodate at the same time causes pain and fatigue of the eyes. This condition associated with

a want of balance of the muscle favors the development of strabismus. For many years Donders' explanation of the cause of strabismus was fully accepted, and with very good reason, for the adjustment of glasses relieved the spasm and helped to correct the squint. But it did not fully explain the conditions. Examinations of many thousands of eyes showed that the principal refractive error was hyperopia, and that the number of cases affected with strabismus among them was comparatively small. It was also shown that many cases of convergent strabismus were found among myopes. Without going into the discussion of the subject more fully, I will only say that scientific investigators were compelled to look for something in addition to hyperopia to account for the squint. The quotations I have made bear on this point, and many more opinions might be added. I have said above that in the treatment of a case of squint the first thing to do is to estimate the error of refraction and then correct it. The patient should be tested every year to see if the glasses are comfortable and satisfactory. When glasses are first adjusted to a child from two to five years of age, there are possible errors in the correction of the refraction which will not occur in a child old enough to read. Then, too, even children who can read will pass a more satisfactory examination the second time than the first. They have become accustomed to the glasses and the eyes adjust themselves to them after constant use for a few months. In addition to this, and a point which is very important, you will have a chance to see the influence of the glasses on the convergence. In my judgment, therefore, except in very high degrees of squint, it is better for the child to wear the correcting lenses for a period of from one to four years before a tenotomy is made. This may seem very conservative, but I think that *final* results will bear me out in this position. The primary results of many skillfully made tenotomies are very satisfactory for a period of five years or even longer. But examine these cases later on and what do you find? A moderate and even a pronounced divergence. Can we avoid this result? Stellwag speaks of persons who outgrow strabismus, and every

oculist has seen them. Does this not prove that there is a want of muscular balance which has a tendency to correct itself as the child develops into manhood or womanhood? This is the factor which tends to bring about the bad results which we used to see so frequently some years ago. Let me give you a typical case illustrating the influence of glasses. Boy, æt. 7, convergent strabismus—moderate degree of H. After he had worn the glasses a few months his eyes were parallel and continued so as long as he wore them, but as soon as he removed them the squint returned. He saw perfectly in the distance with them and could study without discomfort. He wore the glasses seven years and then said he could not see in the distance with them. He was allowed to use them only for study. A year later he said he could not study *with* them, and this proved to be true, and he was allowed to take them off. His eyes were then perfectly parallel and he had no asthenopic symptoms. Nor has he had any since. A tenotomy in his case when first seen would certainly have been followed by a marked divergence. The glasses corrected the squint, but his H. remained the same. It certainly was not the H. alone which caused the squint. It was H. plus a want of innervation of the muscles. After the boy had grown and developed physically his ocular muscles no longer needed the aid which the glasses gave. Not all, and in fact not many children, will be able to take their glasses off at fifteen or sixteen, but if they will begin to wear glasses soon after the squint shows itself they can hope to correct it. I could give the notes of scores of cases of children whose strabismus was relieved by glasses.

I would say then, put glasses on as soon as possible after the squint shows itself. Last summer I prescribed glasses for a child only two years and two months old,⁴ and she wore them with perfect comfort, and, strange to say, asked for them as soon as she woke in the morning. I have frequently ordered glasses for children three and four years old. To do much

⁴See AMERICAN JOURNAL OF OPHTHALMOLOGY, Vol. IX, page 339.

good glasses must be adjusted soon after the squint has developed, but even in cases of long standing I would give the glasses a trial before resorting to a tenotomy.

I would say this in conclusion, that except in very high degrees of strabismus I would prescribe glasses and direct the course of study if the child is in school. Tests should be made from time to time to see the influence of the glasses and to determine whether or not they need changing. This applies more particularly to children from three to nine years of age. After a trial for two or three years, without decided benefit to the convergence, I would not hesitate to operate. In children from ten to fifteen the correction of the H. will not do so much good. In them care should be taken in operating and the error of refraction corrected first.

A conservative course in these cases will save the surgeon from some feeling of regret and the patients from an unsightly deformity which is greater than the original one.

As there is always a slight advancement of the eye after tenotomy of the internal rectus, I think it better in many cases to make a limited tenotomy of both interni. In this way the prominence is equalized and the eyes present a more natural appearance. When the eyes are prominent this precaution is more necessary than when they are deep set. I feel quite safe in asserting that the profession has belittled the importance of strabismus operations. It requires much skill and judgment to do them successfully, and many important points have to be considered before determining the propriety of the operation. They are usually done on children who have long life before them, and can not afford to have their deformity made worse. You may have heard men say I can straighten eyes but I would not attempt a cataract extraction. If they knew more of the final results of strabismus they would decline them also.

A CASE OF GUMMA OF THE SCLEROTIC.

BY ADOLF ALT, M.D.

According to Alexander (Syphilis of the Eye) well authenticated cases of gumma of the sclerotic, have been reported but rarely, while gumma of the ciliary body involving the sclerotic has been more frequently recorded.

Mrs. A. H., thirty-five years old, consulted me on September 16, 1892, on account of a small swelling, situated near the corneal margin up and inwards, of the left eye. She told me that it had been in existence for three weeks, but that she had a very sick baby, six weeks old, whom she nursed and therefore could not see me any earlier. Inquiry and examination revealed no signs of constitutional trouble and I took the case to be one of rheumatic episcleritis. One strange feature about the swelling was, that it seemed necrotic in the centre, having a yellowish semi-transparent appearance. This apparently necrotic spot grew within a few days so much that I made a small incision to remove, what I thought to be pus. However, the incision revealed it to be a lardaceous tissue and not pus. The treatment which consisted in salicylate of sodium internally and local massage with aristol-ointment did not influence the continued growth of the swelling in the least. About two weeks after I had first seen her, the child died. She now complained of sore throat and I found the pre-auricular glands slightly swollen. Instead of the salicylate of sodium, I now gave the iodide of sodium, thinking that I had to deal with a late manifestation of syphilis. This, however, made no change in the spreading of the growth, which gradually formed a hard semilunar ridge around the upper half of the cornea. On October 27, a papulous syphilide made its ap-

pearance all over her body. I now gave mercury internally and gradually an improvement began to set in. Infection was absolutely denied, and perhaps really not known, by her. The husband kept out of my way and I am, therefore, at a loss to know anything with regard to its time. The mode of appearance of the symptoms while I saw her was surely an unusual one. First a gumma of the sclerotic, then swelling of the pre-auricular glands and sore throat, and finally a skin eruption. No local application I had made, seemed of any value in the treatment of the scleral growth. Finally I made inspergations of calomel, in spite of the internal exhibition of iodide of sodium. Under this local treatment the tumor shrank rapidly, and in its stead nothing but a slight depression of the sclerotic corresponding to the original seat of the swelling, remained in the latter part of December. I had meanwhile turned her over to her physician, who told me that the child died of marasmus, which I suppose was congenital syphilis.

CORRESPONDENCE.

TO THE OPHTHALMIC SURGEONS OF THE WEST- ERN CONTINENT, THE PAN-AMERI- CAN MEDICAL CONGRESS SENDS GREETING!

It asks their aid to make this the greatest gathering of American Physicians that has ever taken place. The meetings will be held in Washington, D. C., on September, 5, 6, 7 and 8, 1893. It is to be a part of the scientific work of the Columbian Exposition, which will attract the eyes of the world to Chicago. I have been honored in being put in charge of the Ophthalmic Section of the Congress, and naturally desire that this department shall be at least the co-equal of any of the various sections, in the good scientific work the Congress is expected to exhibit.

Ophthalmology, the first of the medical specialties to attract the attention of surgeons, took the lead in the great advance of modern medicine; and it keeps abreast with the most zealous in developing that science which has for its sole aim the health and welfare of the human race. Eye sight is essential to the world's progress. How best to preserve it is a study in which man must ever take the deepest interest. While we know much in this connection, there is a great deal more to be learned. We need light on all points in ophthalmic practice, so that the tendency of diseases towards the destruction of the eye sight may be checked.

In certain directions immense progress has been made. Those blind from cataract now receive their sight through a perfected operative manual. Would that we could say the

same for chronic glaucoma, and for the detachment of the retina. The pathology of sympathetic ophthalmia, and how to prevent its frightful ravages, is much needed information. We are familiar with the disturbing influences which the various eye nerves occasion. The recognition and the correction of refractive errors give brilliant results in the relief of eye and head pains; yet we know that glasses alone do not always remove the annoying head discomforts which badly-working eyes produce. The want of concordance in the action of the eye muscles is often a barrier to relief. How to manipulate these, so as to stop annoying reflexes, is a want which all recognize.

How to stop the progress of nerve atrophy and turn back the stream of health-giving impulses is also knowledge anxiously desired. What to expect from electricity in the strengthening of eye muscles, and electrolysis in removing opacities of the cornea, are subjects full of interest in a field comparatively unexplored. There is no part of ophthalmology so well known that additional information is not needed.

In the four (4) days of the congress, devoted to the reading and discussion of papers, we expect to be instructed on many obscure points of eye pathology. We hope that all ophthalmic surgeons will give to the meetings not only their presence, but also their experience on special points, to which they have given the more careful study; for as is well known in our specialty, there are many specialties.

The Columbian Exposition, of which we are an outgrowth, will be an institution long to be remembered. Let it also be said of the Pan-American Medical Congress that it has put scientific medicine upon a much more advanced platform than had existed prior to the meeting. This ophthalmic section of the Congress is open to each and every member of the medical profession of the Western Hemisphere pursuing the study and practice of ophthalmology. Each one is especially invited to be present at the meetings of the Section. We desire carefully prepared papers to be read and discussed. Will you prepare a paper on whatever your professional experience has

taught you to be especially good or new, in ophthalmology? or will you come prepared to discuss the subjects which will be introduced to the Congress by the reading of papers? In any case come to the Pan-American Medical Congress in September, 1893.

JULIAN J. CHISOLM, M. D., L. L. D.,
Pres. of Ophthalmological Section
Pan-American Medical Congress.

114 West Franklin Street, Baltimore, Md., Dec. 15, 1892.

OPHTHALMOLOGICAL SECTION OF THE PAN-AMERICAN MEDICAL CONGRESS.

Dr. Julian J. Chisolm, of Baltimore, who is the Chief of the Ophthalmological Section of the Congress, has organized his department with the following gentlemen, well known, as ophthalmic surgeons:

Dr. Geo. M. Gould, of Philadelphia, English-speaking Secretary; Dr. J. Harris Pierpont, of Pensacola, Spanish-speaking Secretary.

THE HONORABLE PRESIDENTS OF THIS SECTION ARE.—Drs. Herman Knapp, New York; Eugene Smith, Detroit; Stephen C. Ayres, Cincinnati; J. L. Thompson, Indianapolis; X. C. Scott, Cleveland; Abner Calhoun, Atlanta; Herbert Harlan, Baltimore; Chas. W. Kollock, Charleston; Stephen C. Richey, Washington; Jose Ramos, City of Mexico; G. C. Savage, Nashville; J. E. Minney, Topeka; W. H. Carmalt, New Haven; H. J. Baldwin, Montgomery; Aurelio Alarco, Lima, Peru; Carlos Finley, Havana, Cuba; Hasket Derby, Boston; J. C. Kipp, New York; Dudley S. Reynolds, Louisville; Maximo Cienfuegos, Santiago; F. C. Hotz, Chicago; Chas. E. Michael, St. Louis; Samuel D. Risley, Philadelphia; R. H. Lewis, Raleigh; T. E. Murrill, Little Rock; E. C. Rivers, Denver; C. M. Shields, Richmond; J. F. Fulton, St. Paul.

IN THE ADVISORY COUNCIL ARE THE FOLLOWING OPHTHALMIC

SURGEONS.—Drs. Adolf Alt, St Louis; L. W. Fox, Philadelphia; Geo. T. Stevens, New York; Edward Jackson, Philadelphia; B. A. Randall, Philadelphia; H. V. Wurdeman, Milwaukee; R. Sattler, Cincinnati; J. J. Thompson, Kansas City; L. Connor, Detroit; Hiram Woods, Baltimore; R. L. Randolph, Baltimore; J. A. White Richmond; S. M. Burnett, Washington; A. R. Baxter, Cleveland; J. P. Parker, Kansas City.

SECTION OF OTOTOLOGY.

HONORARY PRESIDENTS.—Drs. Adolf Alt, St. Louis, Mo; Albert A. Buck, New York; Gorham Bacon, New York; Wm. Cheatham, Louisville, Ky.; Francisco de P. Chacón, City of Mexico; Sebastian Cuervo y Serrano, Sancti Spiritu, Cuba; J. C. Connel, Toronto, Canada; Stephen Dodge, Halifax, Nova Scotia; J. B. Eaton, Portland, Oregon; A. A. Foucher, Montreal; John F. Fulton, St. Paul; J. Wilford Good, Winnipeg, Manitoba; Francis B. Loring, Washington, D. C.; Henry D. Noyes, New York; Arturo Costa Pruneda, Santiago, Chile; Charles Inslee Pardee, New York; G. Sterling Ryerson, Toronto, Canada; D. B. St. John Roosa New York; W. H. Sanders, Mobile, Ala.; Belisario Sosa, Lima, Peru; G. C. Savage, Nashville, Tenn.; J. J. Vermyne, New Bedford, Mass.

EXECUTIVE PRESIDENT.—Dr. C. M. Hobby, Iowa City, Iowa.

SECRETARIES.—Dr. Max Thorner (English-speaking), Cincinnati, O.; Dr. H. McHatton, (Spanish-speaking), Macon, Ga.

Drs. Fernando Perez [Juncal 809] Buenos Aires, Argentine Republic; Ernesto Mazize, La Paz, Bolivia; Theodore Peckolt, (Jor) Rio de Janeiro U. S. S. of Brazil; J. H. Wishart, Toronto, Canada; Carlos Desvernine [Cuba 52] Havana, Cuba; Carlos Esguerra, Bogota, Republic of Columbia; Demetrio Orantes, Guatemal City, Guatemala; H. G. McGrew, Honolulu, Hawaii; Antonio Penafiel, [Escuela de Medicina] City of Mexico, Mexico; Montenegro, Leon, Nicaragua; N. Surh [Ituraingo 265] Montevideo, Uruguay; Focion F., Cordero F., Merida, Venezuela.

SOCIETY PROCEEDINGS.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

THURSDAY, DECEMBER, 8, 1892.

HENRY POWERS, F. R. C. S., President in the Chair.

KERATO-MALACIA IN YOUNG CHILDREN.

Mr. Holmes Spicer read this paper, with notes of several cases. Young children are more liable than adults to gangrene of the cornea when their vitality is reduced below a certain level; the gangrene may occur spontaneously or as the result of comparatively slight attacks of conjunctivitis. In the late stages of tuberculous meningitis and in infantile diarrhoea, the cornea undergoes destruction, but this is due partly to exposure and partly to insensibility. After measles or whooping-cough with bronchitis, and in malignant varicella, where there has been much exhaustion, the cornea is not infrequently seriously damaged by large perforating ulcers. After serious malnutrition the cornea may slough spontaneously; this is not uncommon among nurslings in countries where the mothers practice long religious fasts; in this country it is rare except among the hand-reared, who have had insufficient nitrogenous diet. Kerato-malacia generally attacks both eyes of children from four to nine months old; it begins with dryness of the conjunctiva, with patches of froth on its surface, and with night-blindness; soon the whole cornea becomes opaque and perforation occurs; the cases often terminate fatally. The treatment should be increase of the nitrogenous elements of food, some meat juice or raw meat finely pounded, in addition to milk for young babies, and cod-liver oil; and locally, eserine

in the form of ointment, to the eye, with warm applications to the lids. Some of the cases with this treatment made a good recovery; in one case the cornea recovered, although the child succumbed eventually.

The President spoke of kerato-molacia in adults, and mentioned a case he had recently seen in a woman completely crippled by deforming arthritis.

Mr. Drake-Brockman had met with many cases of keratomalacia in India during famine, and in epidemics of cholera, and not infrequently in chronic dysentery. In children the condition was, he thought, often associated with congenital syphilis. In some cases destruction of the cornea occurred with extraordinary rapidity.

Mr. Doyne mentioned the case of a child six weeks old, in which the cornea eventually cleared almost completely.

Dr. Priestley Smith (Birmingham) referred to the necessity of carefully watching the cornea in children and others prostrated by serious illness. In such cases the corneæ were often exposed during sleep, and were prone to severe ulceration. Protection of the corneæ by a bandage, or adhesive plaster on the eyelids will often prevent this dangerous complication. Sometimes union of the margins of the lids is necessary, and to effect this he had had recourse to a procedure differing a little from that ordinarily employed in blepharoplasty. He split each lid at the margin, in its long axis (as in Arlt's operation for trichiasis), and by means of stitches brought together the raw surfaces of the gaps in the upper and lower lids. By this means no loss of tissue was incurred, and in his experience the results were very satisfactory.

PANOPHTHALMITIS FOLLOWING LACHRYMAL ABSCESS.

Dr. Rockliffe (Hull) read notes on this case. The patient, aged 63, had suffered for thirty years from lachrymal obstruction, but never before the present attack from abscess of the sac. The suppuration in the lachrymal sac was followed by conjunctivitis, chemosis, keratitis with hypopyon, panophthalmitis, and excision of the globe. On examination the whole

eyeball was filled with inflammatory products, and there had been much matting of the orbital tissues.

Dr. Hill Griffith (Manchester) thought that if the cornea had entirely escaped injury, the case was unique. He had seen one case in which suppurative panophthalmitis had followed lachrymal abscess, but in that instance the cornea became accidentally abraded by the end of a lead style.

Mr. Adams Frost referred to a case in which infection of the orbital cellular tissue occurred through a small wound of the conjunctiva, and led to complete destruction of the eyeball.

CICATRICAL ECTROPION TREATED BY TWEEDY'S OPERATION.

Dr. Rockliffe (Hull) reported the case of a man who had been kicked in the face by a horse, dividing the lower lid close to the inner canthus, and splitting the cheek open. The resulting cicatrix produced ectropion. Tweedy's operation was performed with results quite as satisfactory as in cases in which the deformity was at the outer canthus.

A CASE OF PROBABLE RUPTURE OF THE OPTIC NERVE.

Dr. Johnson Taylor (Norwich) read notes of the case of a young man, who in stooping to pick up kindling wood, struck his right lower eyelid violently against the end of a piece of wood standing obliquely on the floor, with the result of immediate and permanent loss of sight in the right eye. The neighboring bone was not struck, there was no probability of penetration, the skin alone of the lid appeared to have been broken; no tenderness or swelling of the eyelid, or conjunctiva followed, and only slight temporary patchy discoloration of the skin resulted. No headache, vomiting, or other symptoms ensued, the patient immediately resumed his work and continued it for several hours. When seen for the first time, five days later, the right eye had no perception of light, the direct pupillary reflex was entirely absent; the indirect reflex and contraction of the pupil with convergence were normal; movements of globe normal. The appearances on ophthalmoscopic examination were almost *nil*, and quite inadequate to explain the symptoms. About five weeks later the optic disc showed

decided signs of atrophy. After discussing the possible explanations of the case, Dr. Taylor suggested that the optic nerve had been ruptured either by sudden violent and extreme rotation of the globe, or by overstretching, the result of the sudden proptosis produced by the piece of wood being driven in between the eyeball and the lower orbital margin. The patient was shown at the meeting.

Mr. Adams Frost mentioned a case he had seen at Moorfields, in which the stem of a tobacco-pipe had penetrated the orbit and ruptured the optic nerve. The disc became recognizably atrophic in four to six weeks. The external wound was so insignificant that if the pipe stem had not remained in the orbit till the patient came to the hospital, it would have been impossible to say that there had been more than a cutaneous wound. He thought that in Dr. Taylor's case, direct injury to the nerve by penetration of the piece of wood was the more plausible explanation.

Mr. C. Wray spoke of a patient under his care, in whom, after removal of the blind eye, an orbital exostosis was found, against which the nerve might easily have been compressed.

Mr. Bullar (Southampton) referred to a case, in some respects similar to Dr. Taylor's, in which there had evidently been a perforating wound of orbit.

Mr. Tweedy mentioned the case of a man under his care at University College Hospital, in whom a piece of tobacco pipe stem had entered the orbit, damaged the optic nerve, causing blindness, and had remained in the orbital tissues for two years. The man was unaware that he had received any injury other than a "scratch" on the eye.

THE NEW YORK OPHTHALMOLOGICAL SOCIETY.

At the annual meeting, held on Monday, January 9, the following officers were elected: President, Dr. W. F. Mittendorf; Vice-President, Dr. W. S. Bennett; Secretary and Treasurer, Dr. Frank N. Lewis; Committee on Admissions, Dr. H. D. Noyes, Dr. C. E. Hackley, and Dr. David Webster.

SELECTIONS.

A CASE OF INFANTILE MENINGEAL HÆMOR- RHAGE—RESULT SO-CALLED CONGENI- TAL CHOREA—BLINDNESS?—DEAF- NESS?—REMARKS.

BY JOHN DUNN, M. D., OF RICHMOND, VA.,
Chief of Clinic of Richmond Eye, Ear, and Throat Infirmary.

July 27, 1892—History is as follows: Claude F., born November 15, 1891; birth natural; head presentation; time from first pain until birth of child, three hours; has three brothers and one sister, all healthy; no evidence of past specific history. The night following the birth of the child the mother remembers to have had her attention called to the fact that the child noticed the lamp in the room. On the second night after its birth, the child began to scream; to foam at the mouth, and to "gum" or "suck" its tongue so violently that the froth coming from its mouth was bloody; at the same time, the child had severe convulsions, during which its forearms were flexed upon its arms, and its fingers "clinched;" its eyes turned upwards as far as possible. The spasmodic contractions lasted about ten minutes. The child was fretful, and cried for several hours following them. About six hours after the first attack, a similar attack of "spasms" set in, which again lasted about ten minutes. On the fifth and eighth day after its birth, the child had similar attacks of about the same duration; since then, there have been no severe convulsive attacks. During the last attack the child turned a "water-wave purple" all over, and the mother feared instant death would take place. Since

the last attack, the child has never voluntarily moved its arms, which are flexed at the elbow, the fists balled, and held close to the side. It has been able to move its legs, although all its strength seems to be in the thighs, and all the movements seems to originate at the hipjoint. If the child be held up by the arms so that the legs hang free, the heels are seen to be drawn up so that the toes point to the ground, in which position they remain, flexion of the ankle being lost. The child has never made any effort to move its body. If the child be held up, and its head be placed forward so that the chin rests upon the chest, it remains there the muscles of the neck making no effort to raise it; while if the head be held erect, it will fall backwards as far as possible, and then remain in this position, the child being unable to raise it. When the child is lying on its back, with its head resting on a pillow, it has the power to roll its head from side to side, and often does so in quick succession. Several times a day the child will roll its eyes up and down spasmodically; while all during the day, and even when the child is asleep, there are noticed spasmodic jerkings and twitchings of the feet and arms. The child has never "taken notice" of any object or sound. Shaking objects close to the eyes does not cause the eyes to wink. The child takes no notice of a cap fired close to its ears. The pupils respond to light, are normal in size, and dilate under atropia. Ophthalmoscopically the fundus is normal, unless there be a slight paleness of the optic discs. There is no paralysis of the eye muscles, nor of any of the muscles of the face. For the first few days after its birth, the child showed no desire to "take the breast," and it was only after considerable "training," that it learned to avail itself of this source of nourishment. Although the child will not notice a strong light, when flashed into the eye a second or a third time, it will turn its eyes towards the light, but as quickly turn them away. The child seems to know its mother, but whether it has learned to know her through the sense of touch or of hearing, it is hard to say—probably through the former. Although it will not notice even loud noises close to its ears, when its mother is

talking to it, the child shows a certain degree of satisfaction, as though the sensations it perceived were pleasurable. The child has never made any effort to sit up, or crawl, or speak. Mercurial inunctions and pilocarpine were ordered.

September 6, 1892.—The above treatment has been persevered in, more or less faithfully, with the result that the infant no longer carries its arms flexed at its side, but can move them about with considerable freedom. Light seems to make more impression upon the eyes than when treatment was begun. In other respects, there has been no amelioration in the condition of the child.

November 15.—Condition about the same.

Both the history of the case and the symptoms point to meningeal hæmorrhage as the cause of the trouble. The cause of the hæmorrhage it is difficult to make out, in this case, a probable conjecture; it seems likely that, as in the great majority of these cases, in was "due to the special conditions of parturition," for the birth was, in every way normal and easy, and for forty-eight hours the child was apparently perfectly healthy, and "just like other babies;" furthermore, during this time it did what it never done since, noticed a light when brought into the room at night. While it is true that, in a majority of the case of infantile meningeal hæmorrhage, "nothing particular is noticed in the condition of the child during the first few days or weeks of life," this very *while* makes it not improbable that the hæmorrhage, in a certain proportion of these cases, is the result of injury received after birth, rather than at the time of birth. Perhaps, in dressing or in handling this child, the injury was done to the head that resulted in the hæmorrhage. The spasms, and the epileptiform foaming at the mouth, appeared as symptoms that the hæmorrhage was in such quantities as to produce compression with irritation, or perhaps destruction of the brain cortex in its vicinity.

The localization of the seat of the hæmorrhage in this case is more difficult than is generally the case in brain lesions, the majority of which can now be made with considerable accuracy. The difficulty lies in the extent of the lesions. The

lesion affects, as far as we may see, both sides alike, and to an equal degree. The symptoms point to a hæmorrhage from the region of the longitudinal sinus, which involved most likely, by compression, large areas of the brain cortex on either side. Whether or not the median surfaces of the brain are affected is uncertain.

It is a question whether the child is blind, or whether it is unable to distinguish between the objects that pass before the eyes; whether it is blind, or whether it is utterly unable to interpret the sensations produced by pictures upon the retina; whether the higher centers for sight have been destroyed; whether, if the higher centres, the interpreting areas, have been deprived of their function, there will occur atrophy of the optic nerve as a result.

At present, the condition of affairs seems to be about as follows: The pupils respond to light, showing the reflex arc for light is intact; the optic media being healthy and normal, pictures form upon the retina, and corresponding nerve-waves start along the optic nerves for the sight-sensorium, this being injured to a great degree or destroyed, the optic nerve sensations are not interpreted at all.

While from the standpoint of usefulness it is the same to the child whether it is blind, or whether it is deprived of the power of interpreting the significance of *what it sees*—(i. e. of the retinal impressions), from a medical view the two conditions are different, and it will be interesting to know if a continuance of the second condition will ultimately, as a necessary consequence, result in the first. Perhaps not. The disturbance to the sight-power was probably the result of compression of the brain cortex in the region of the occipital convolutions and the cuneus. If these convolutions have been compressed to such a degree that atrophy has resulted, or if these convolutions have been destroyed, actual blindness is the condition from which the child suffers. If the destruction has been complete, it is no longer a question of light, or darkness, or form, or color, for these cannot then exist for the child who is left in the condition of a being created without

the sense of sight—one to whom perpetual darkness means no more than perpetual sunshine, and one to whom these terms must remain incomprehensible. If, on the other hand, these sight areas be perfectly healthy, while there has been a destruction of the association fibres, which connect the sight areas with the other parts of the brain (and the best marked of these association tracts connect the occipital lobes with the frontal lobes, sight with the intellect), the while the optic fibres bring intact the sensations of color or of form to the occipital lobes, there is no interpretation of the meaning of these sensations. The infant suffers from *idiot blindness*.

It would, again, be interesting to know, in this latter condition, how far instinct would develop reflexes from these sight sensations; how far these sight sensations could be the source of pleasure or discomfort; whether there would result a certain amount of gratification in opening the eyes to the light of day rather than to darkness.

There is still another question just here: Are these cortical areas, if irritated, the source of hallucinations purely visual? Are there, from time to time, sparks or flashes of light of various colors before the eyes, such as at times result from irritation of the occipital convolutions?

A similar series of problems offer themselves for solution in regard to the power of hearing. Sound-waves reach the eardrums; these vibrate, and the vibrations are transmitted to the terminals of the nerves of hearing, whence awaked waves proceed until they reach the impaired or destroyed centers for the interpretation of these waves, and again the child may be physically deaf, or may suffer from *idiot deafness*.

As regards the interpretation of stimulations affecting the nerves of smell or taste, the infant is too small to make experiments with the hope of success. No diminution can be shown of the sensations of pain or touch. The irregular spasmodic movements, choreic, which present themselves in this case have the peculiarity that they do not cease during sleep, and are often severe enough to awaken the child; they

differ in this respect from the large majority of other cases of chorea.

The prognosis in this case is bad. It is not improbable that large areas of the brain cortex are compressed or worse injured. As the brain substance, once destroyed, is never regenerated, the chances are that the mental powers of this child will remain weak beyond hope. And there is no way of accurately forecasting the ultimate condition of the child. It is highly probable that as time goes on, it will gradually acquire more or less control of its arms and legs, the movements of which, at present show marked incoordination. A certain proportion of these cases, however, improve beyond what seems to be a reasonable expectation in the light of the nature and duration of the symptoms.

Mercurial ointment was prescribed with the hope that it might hasten the absorption of the remains of the hæmorrhage—not from the belief that the case was syphilitic, and the improvement obtained must, in all likelihood, be attributed rather to time than to the *vis medicatrix medicinæ*.

A SECOND CASE OF CONGENITAL CHOREA—CHILD 13 YEARS OF AGE, WHO CAN SEE AND HEAR, BUT WHO HAS NEVER LEARNED TO SPEAK, AND AS YET HAS NEVER BEEN ABLE TO LEARN TO WRITE—A SUPPLEMENT CASE TO THE PROCEEDING ONE.—DIMINUTION OF THE CHOREIC MOVEMENTS, WITH THE USE OF GLASSES.

The following case, which came under my observation after the notes upon the first case had been made, serves to bring up several interesting phases of the results of infantile meningeal hæmorrhage, which phases were, in the above case, from the nature of these reports of cases, necessarily omitted.

Annie Page, aged 13; birth prolonged and difficult; healthy brothers and sisters; brought for treatment because she had “never learned to talk like other children;” is small for her age; head is very small; patient badly nourished; arms and legs not out of proportion to her bodily development, although

both are poorly developed; right grip weaker than left; no demonstrable fault of larynx, pharynx, palate, etc., under laryngoscope; no form of facial paralysis; there are spasmodic jerkings of the muscles about the corner of the mouth, more frequently on the right side; these spasms occur every minute or two, and cause the face to assume a silly smile; there is also a spasmodic winking of the right eye. The choreic movements affect both arms, producing, especially, a spasmodic shrugging of the shoulders; these movements occur more frequently in the right than in the left side, and, as far as I can judge, these choreic arm movements are all produced by the shoulder-movements. The little girl did not learn to walk until she was 3 years old. As she could move her arms and legs with considerable freedom, and as she could not sit up, the weakness must have been in the muscles of her back, from which weakness she has not as yet entirely recovered. The patient has had both varioloid and measles, and the eruptions of both diseases were confined entirely to the right side. She was vaccinated at the same time in both arms; in the left arm, the virus "failed to take."

The interesting features of the case are that the child has never learned to talk, and cannot be taught to write—"because she cannot remember her letters," say her mother. The child hears fairly well, and understands what is said to her. Told to repeat the alphabet after me, her vocal apparatus emitted the following sounds:

a was a,	j was æ,	s was æ,
b was b,	k was æ,	t was e,
c was e,	l was ā	u was e,
d was e,	m was æ,	v was e,
e was e,	n was æ,	w was r (German ā),
f was ā,	o was o,	x was æ,
g was e,	p was e,	y was i,
h was a,	q was e,	z was æ.
i was i,	r was r, (German ā)	

If asked her name, Annie Page, she will reply "ā a." For

yes she says "æ;" for no, she says "or." There is, however, no rolling sound to the r, but the "or" is the German *ä*. If we examine a moment the child's power to pronounce sounds, we shall see it is very limited. Its alphabet consists of a, b, e, i and o, and the German *ä*; all purely vowel sounds, except b, which the child can say distinctly. The child endeavors to answer any question asked her, but her words are combinations of the above vowel sounds. If asked to repeat any word of more than one syllable; she says always "æe." The patient knows a number of the letters by sight, but can be taught to make only two of them, a and b, and these two letters but imperfectly. The endeavor to make any other letter results in the formation of an o. The child's sight is imperfect, owing to the existence of a high degree of hyperopic astigmatism; for several years at varying intervals, the child has been subject to visual hallucinations; has seemed to see objects before her which no one else in the room could see; she would run to me, bury her face in my lap, and then from time to time, would look out, and would again hide her face as though she still saw something." The child has been less subject to these hallucinations for the past year or two than formerly.

This is again a case of infantile meningeal hæmorrhage, and the parts of the brain which, it would seem, were the seat of the greatest permanent injury, are Broca's centre, the posterior part of the third frontal convolution, and what is supposed to be the centre for movements necessary for writing, the posterior part of the second frontal convolution, and the immediately adjacent areas, and these areas of the left side—perhaps both sides, but greater on the left. Although this seems, at first blush, to be a satisfactory solution of the question of localization, the problems of the case are not settled so easily. The child recognizes objects seen, knows their use, understands spoken language, can carry in her mind commands given her and will obey them; nor can it be proved, so far as I can judge, that the sensations of touch, of feeling, or of smell, are misinterpreted by her. All this goes to show

that the regions of the brain where preceptions of sight, of touch, of smell, of hearing, are stored away and correlated, resulting in ideas, have retained their functions. No apraxia can be proven. The patient has, however, true motor aphasia, almost complete. Say to her, "Do you know what a chair is?" She will reply, "æ," while the expression of her face shows that she understands you. Point to a table and say, "Is that a chair?" Her reply is "or." Point to the chair, she says, "æ." Say to her, "Say chair," and her reply is "æ," while the expression of her face shows that she is disappointed at her failure, which she recognizes, to repeat the word you have spoken. This seems to show that the part of the brain (Broca's centre), where normally is stored away—not the memory of the spoken word, chair, but the memory of the combination of motions necessary to the sound production of the word chair—is not functioning. The auditory centre for spoken words is intact, and impulses start from this to the centre for originating spoken words. These impulses reach a diseased, perhaps, in a great measure, atrophied area, and result in the production of the sound "ä" which, as soon as spoken, is recognized by the child's auditory centre for spoken words as incorrect, and results in the facial expression denoting dissatisfaction. There seems to remain of Broca's centre a part capable of performing, to a certain small degree, its functions, for the child can repeat, after you, a, b, e, o, i; but, although she can do this, she cannot make intelligible use of these sounds in words containing them, and most of her endeavors to repeat words after you, no matter what the words is, result in "æ."

So, too, there seems to be destroyed, in a great measure, the posterior part of the second frontal convolution, the centres where should be stored away the "memory," of the combination of motions necessary for the making of letters and words, the writing centre. The child recognizes more letters than she can make; but, as the child is unable to pronounce letters, it cannot be said how many letters she has learned to know by sight. After years of trial, she has succeeded in

learning to make a and b; the a is a capital letter, and she will leave out the mark that crosses the angle; and she often makes the b, which is also a capital, backwards; showing, it would seem, that the above-mentioned centres are badly damaged. Tell her to make c or d or e or f, or any of the letters of the alphabet, she will take the pencil in her hand; seems to understand what you want her to do; her fingers will move the pencil over the paper, and the result will be approximately an o; and after it is formed, and she sees it, often an expression comes on her face which seems plainly to say, "That is not right." The eyes recognize that the hand has failed to respond to the impulses sent to the writing centre from the sight-memory areas.

Thus, without going more into details just here, it would seem that although there is no paralysis of the muscles necessary for writing or speech, the brain centres, where normally are stored away the muscle memories of combinations necessary for writing and speech, are greatly injured. Nor does it seem likely that child will ever acquire the power of speech or writing, the damage to the centres being permanent.

There are one or two other points of interest in connection with the case. After the child's eyes had been fitted with glasses, and she had worn them a short while, the frequency of the choreic movements about the right eye, the mouth, and shoulders, diminished markedly. They have not, however, ceased entirely. This fact seems to show that in cases of congenital chorea, and it is fair to suppose that the same thing applies in cases of acquired chorea, the undue stimulation of the brain centers for eye muscles, which results necessarily when there is eye-strain due either to defects of refraction or lack of equilibrium of the external muscles of the eye, may reflexly increase the excitement in the areas whence the choreic movements have their origin, and hence augment the frequency of these choreic movements; and, in like manner, may, in cases of epilepsy, increase the number of attacks.

In an uncertain proportion of cases of epilepsy, chorea, and some other troubles, which the nature of this article does not

allow us to look into, the prime causes of the chorea or epilepsy may, of themselves, be sufficient to precipitate their peculiar convulsive movements only under certain conditions, and then with little frequency; reflexly, however, upon undue excitement in the arcs regulating the movements of the eye-muscles, there may result sufficient excitement to precipitate the attacks with increased frequency. Thus it has happened that cases of epilepsy, chorea, etc., have been reported as cured by relief of eye-strain due either to refractive conditions or to want of muscular equilibrium, whereas alleviation has been given only as regards the number of the attacks, which alleviation has been far more marked in some cases than others.

The further lesson from this observation is that in all cases of chorea or epilepsy the condition of the eyes should be carefully looked into, and any departure from the normal should be carefully corrected; and while I doubt the possibility of obtaining many permanent cures, in these diseases, by the correction of refractive errors, or the methods of partial tenotomies, great relief may be afforded to patients who may seek relief in vain from other sources. (So far from wishing to cast a slur upon the methods used for the restoration of the equilibrium of the eye-muscles by partial tenotomies, and the results obtained by them, in my opinion the introduction of the terms exophoria, esophoria, hyperphoria, etc., marks a period in the advance of our knowledge of the eyes, the greatest since the days of von Græfe). Further remarks upon this subject will be omitted for the present.

The prognosis in this case is bad, while continuous endeavors will be made to cause the patient to utilize the sounds over which she has control, in the pronunciation of the simple words in which they occur, there seems little hope that she will ever learn to talk or to write.—*Virginia Medical Monthly*.